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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,062	10/19/2001	Yoshimi Sugaya	44471-265266 (13700)	5522

23370 7590 10/03/2003

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EXAMINER

NGUYEN, THUKHANH T

ART UNIT	PAPER NUMBER
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1722

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/037,062	SUGAYA ET AL.	
	Examiner	Art Unit	
	Thu Khanh T. Nguyen	1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-12 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1- 4, 6- 7 and 9- 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeSantis (4,573,895) in view of Gueydan et al (6,558,144).

DeSantis discloses an apparatus for compacting powder material, comprising a die body made of extra hard material such as carbide (col. 4, lines 38-40) fitted in a die holder (12) made of tool steel or of metal carbide (col. 4, lines 30-31) forming a cylindrical cavity (32), a couple of punches (34, 98); wherein the cavity is slightly taper at one end (col. 8, lines 2-4). However, DeSantis fails to disclose a coating layer in the mold cavity.

Gueydan et al disclose a metal powder compression apparatus, comprising a die body (10) having a DLC coating layer (col. 6, lines 6-12); wherein the die cavity has a substantially cylindrical shape (Fig. 2-3, 12) and is tapered to facilitate the removal of the product from the mold cavity, and a pair of upper and lower punches (14, 15).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify DeSantis by providing a coating layer in the mold cavity as taught by Gueydan et al because the coating layer would be easier and cheaper to replace upon wear than to replace the whole die body.

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In regard to claims 3, 7 and 9, it would have been obvious to one of ordinary skill in the art to determine a proper taper degree of the cavity, the operating temperature depending on the use and the material of the die or the material being working on.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over DeSantis et al and Gueydan et al as applied to claims 1-4, 6-7, and 9-12 above, and further in view of Huang (5,851,568).

DeSantis et al and Gueydan et al disclose a powder molding apparatus having a coating layer as described above. These references, however, fails to disclose that the coating is a physical vapor deposition layer or a plasma-used chemical vapor deposition layer.

Huang disclose an apparatus for consolidating powder material, comprising a mold having a coating layer to prevent reaction between the working powder material and the surrounding mold, or to prevent the penetration of fine powders into the gaps between the mold (col. 17, lines 1-5); wherein the coating is applied by physical vapor deposition (PVD) or chemical vapor deposition (CVP - col. 17, lines 20-23).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify DeSantis et al and Gueydan et al by applying PVD or CVD coating layer on the mold surface as taught by Huang, because PVD and CVD coating layer are well known in the powder molding art.

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Allowable Subject Matter

4. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


5. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach or suggest a die holder is made of a composition comprising, at ratio by mass of 0.2-0.6 % carbon, 0.15 to 1.2% silicon; 1.2% or less of manganese; 0.03% or less of phosphorus; 0.03% or less of sulfur; 0.4 to 5.5% chromium; at least one of 0.25 to 3.5% nickel, 0.2 to 3.0% molybdenum, 1.0 to 10% tungsten, 2.2% or less of vanadium and 2.8 to 4.5% cobalt; and the balance iron.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Khanh T. Nguyen whose telephone number is 703-305-7167. The examiner can normally be reached on Monday- Friday, 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 703-308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

TN


ROBERT DAVIS
PRIMARY EXAMINER
GROUP 1300 / 1700

9/29/02